

### **REMARKS/ARGUMENTS**

Nonelected claims 38 - 43 have been canceled. New claims 62-96 have been added, and an accompanying Request for Continued Examination is filed so that these claims and the arguments below may be considered.

Claims have been amended to clearly indicate that the devices can have a single vertical channel and a single pillar or a plurality of channels and pillars, that pillars may contain a biomolecule or a plurality of biomolecules, that a sample may contain one or a plurality of analytes and the chip may contain one or a plurality of capture agents (claims 57 and 59, e.g.), and that the pillars and vertical channels are so configured that when the dispensing ship and the pillars are cooperatively engaged, a fluid introduced into the one or more channels can become in contact with the pillar surface or surfaces. These concepts are disclosed throughout the specification.

Claims 18, 19, 56, 57 and 59-61 stand rejected as anticipated by Ershov et al. The Examiner considers that though the reference teaches an intermediate structure, it nevertheless meets the limitations of claim 18.

However, Applicants submit that the Examiner's characterization of Ershov et al. as meeting the claim terms is not accurate.

Figure 2 of Ershov et al. describes an intermediate stage in the manufacture of the device of Figure 1. In figure 2 a continuous layer of aluminum (4) has been laid completely over the base of the chip (1), has then been photolithographed using a mask (see col. 5 lines 1 - 10) and the unprotected areas of the aluminum layer have been removed by pickling to produce a series of spots or holes in the aluminum arranged in a grid. That is what is depicted in figure 2 - a chip with a layer of aluminum in which spots have been removed from the aluminum layer, for instance by pickling, leaving holes in the aluminum layer. The examiner seems to consider the aluminum layer that contains these holes to be a "dispenser body" as claimed. However, the aluminum layer dispenses nothing; it is simply a mold for the gel that is subsequently laid over it and that fills the holes.

A gel is laid over this mold so that gel flows into those spots or holes and also forms a layer above them (Fig. 3). At this point what one has is not a chip having a dispenser body with channels that cooperatively receive pillars in a sample chip. but simply a chip having a layer of aluminum with holes filled with a gel. After that, excess gel and all the aluminum are removed leaving only a chip having a base and gel pillars. All of this is in no way tantamount to the device of claim 18 and claims dependent on it.

Claim 18 is neither anticipated by nor obvious over Ershov et al.

New claims 64 - 96 disclose variations of Applicants' device that further distinguish it from Ershov et al.

New independent claim 64 calls for a device in which the base and pillars are composed of the same material. This is supported in the specification at page 11 lines 10-11. In Ershov et al. the base is formed from glass and the pillars from a gel. The base of the Ershov et al. device cannot be formed from a gel and the pillars are very unlikely to be formed from glass, so that base and pillars cannot be from the same material.

Claim 64 is thus neither anticipated by Ershov et al. nor obvious from it.

New independent claim 74 calls for the pillars to be composed of a material other than a gel. Such language is permitted in claims to differentiate over prior art by excluding a prior art substance. See, e.g., *In re Johnson*, 194 USPQ2d 187, 196 (C.C.P.A., 1977).

Similarly to claim 64, claim 74 is neither anticipated by nor obvious from Ershov et al.

New independent claim 75 calls for the device to contain one or more polypeptides either present in the one or more vertical channels or bound to the surface of the one or more pillars. In Ershov et al. oligonucleotides are contained within the gels (col. 1 lines 50-60).

Claim 75 is neither anticipated by nor obvious over Ershov et al.

New independent claim 76 calls for the one or more pillars to comprise biomolecules other than a polynucleotide. Such molecules are disclosed in the specification at page 14 lines 19 -21, for example. Again this represents a significant difference from Ershov et al., who disclose only oligonucleotides as suitable for their devices.

Claim 76 is neither anticipated by nor obvious over Ershov et al.

New independent claim 86 calls for a device having a liquid other than a gel in the vertical channels. This includes, for example, filling the channels with a liquid before the pillars are inserted so that the liquid facilitates interaction with the pillar surface (see, e.g. pp. 20-21), or passing a liquid through the channels to hydrate material (see, e.g. pp. 18-19). Such a situation cannot occur in the Ershov et al. device since the "channels" are only formed temporarily and are filled with the gel.

This type of device, as well, is thus neither anticipated by nor obvious from Ershov et al.

Finally, new independent claim 96 defines a device that is configured such that when the dispensing chip and the pillars are cooperatively engaged, a fluid (liquid or gas) that is introduced into the one or more channels can become in contact with the pillar surface or surfaces. This is described in the specification for instance at page 10 lines 8-14, and defines apparatus that is distinct from that of Ershov et al., where the gel fills the holes and no liquid can pass through at that time.

### **CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,  
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